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EXAMINER	
STRANGE, AARON N	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	**Application No.** 10/685,851	**Applicant(s)** WINTER, ROBERT L.
	Examiner AARON STRANGE	**Art Unit** 2453

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-20* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☐ All b)☐ Some * c)☐ None of:
1.☐ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

2. In the interest of expedited prosecution, the Examiner would like to note that the limitation “wherein the administrator is operable to …” in claim 1 fails to further limit the claim and need not be given patentable weight. Claim 1 is directed to a "network" comprising “a first node” and "a second node". The “administrator” is not part of the “network”, so its potential (“operable") capabilities have no effect on the structure or arrangement of the elements of the claimed “network”.

Claim 10 contains a similar limitation that also fails to limit the claim. The fact that an administrator is "operable" to do something is not a step in the claimed method, but merely a description of a step that could hypothetically occur in the future. Since it does not necessarily occur, it fails to limit the claimed method.

Claim 18 also contains a similar limitation, and has deficiencies similar to claim 1. Since claim 18 is directed to a "system" comprising a "first node", the fact that an administrator, which is not part of the claimed system, may hypothetically perform an action fails to provide any limitation on the structure or arrangement of the claimed system.

In the interest of expedited prosecution, these limitations have been addressed below as though they were positive recitations of elements of a claimed system or steps of a claimed method. However, the claims must be amended to claim the limitation in a manner that actually limits the claimed in order to give them patentable weight.

Allowable Subject Matter

3. The Examiner would like to note that the subject matter described in the specification (p. 9, ll. 17-24) may be allowable over the prior art of record, if appropriately claimed. Since Applicant's current amendments are directed toward that subject matter, the Examiner recommends conducting an interview to discuss claim language that would be sufficient to place the application in condition for allowance. If Applicant agrees that an interview would be beneficial, he/she is encouraged to contact the Examiner to schedule one.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-3, 5, 6, 8-12, 14, 15 and 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Kracht (US 6,377,987) in view of Gundavelli (US 6,795,403).

6. In regards to claim 1 Kracht discloses, a communications network, comprising:

a. a first node **(fig. 2A #202)** having a first port **(fig. 2A #214)**;

b. a second node **(fig. 2A #204)** having a second port **(fig. 2A #236)**, wherein the second port is connected to the first port by a communications link **(Col. 2 line(s) 57-58)**; wherein:

- i. the first node transmit a first identification message from the first port **(fig. 2A)**, the identification message addressed to an address, the identification message comprising only one frame **(Col. 2 line(s) 47-50)**;
- ii. the second node receives the identification message on the second port **(fig. 2A #236)**;
- iii. the second node logs the identification information **(Col. 2 line(s) 50-53)**;
- iv. and the second node delivers the identification information to an administrator **(network management system)**, the administrator operable to determine that the first node and the second node are physically connected **(Col. 2 line(s) 55-58)**.

Kracht fails to specifically disclose that the administrator is operable to determine that there is another node between the first and second node using a timing analysis.

Gundavelli discloses a similar system for discovery of devices on a network (Abstract). Gundavelli teaches determining the existence of otherwise undiscovered nodes using a timing analysis (delays in BPDU keep-alive packet receipt are monitored and excessive delays cause root nodes to move and result in discovery of new switches)(col. 6, l. 65 to col. 7, l.6). This would have been an advantageous addition to the system disclosed by Kracht since it would have allowed additional switches to be detected, providing a more complete topology of the network.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform a timing analysis of packets sent via the network to cause root nodes to move and provide for the discovery of additional switches.

7. In regards to claim 2 and 11 Kracht disclose wherein the address is a multicast address **(fig. 2A #206)**.

8. In regards to claims 3 and 12, Gundavelli's teach discovering of switch devices in a network. Wherein the bridge protocol data (BPDUs) (messages) are transmitted at the end of 30 seconds **(Col. 3 line(s) 19-20)**.

9. In regards to claims 5 and 14 Kracht discloses, wherein the identification information comprises an IP address **(Col. 2 line(s) 8-9)**.

10. In regards to claims 6 and 15 Gundavelli's teach discovering of switch devices in a network. Wherein the information transmitted includes the MAC address **(Col. 50-56)**.

11. In regards to claims 8 and 17 Kracht discloses, the first identification message further comprises characteristic information **(ex. IP address and logical name)** about

the first node and the first port **(Col. 2 line(s) 47-50)**; the second identification messages further comprises characteristic information **(ex. what is connected on the second port (fig. 2A #220))** about the second node and the second port **(Col. 2 line(s) 55-58)**.

12. In regards to claim 9 Kracht discloses, the node is operable to receive a command **(Col. 2 line(s) 55, query command)**; the node, in response to the command, sends the identification information to an administrator **(Col. 2 line(s) 55-58)**.

13. In regards to claim 10 Kracht discloses, a method for determining a network topography **(Title)**, comprising the steps of:

c. transmitting from a first port **(fig. 2A #214)** on a first node **(fig. 2A #202)**, an identification message, the identification message comprising only one frame and containing identification information **(Col. 2 line(s) 47-50)**;

d. receiving on a second port **(fig. 2A #220)** of a second node **(fig. 2A #204)**, the identification message **(fig. 2A #214)**;

e. logging the identification information **(Col. 2 line(s) 50-53)**;

f. delivering the logged identification information to an administrator **(network management system) (Col. 2 line(s) 55-58)**;

g. determining a nearest neighbor for the first node, where the nearest neighbor has received an identification message from the first node, or the nearest neighbor has received an identification message from the first node **(Col. 2 line(s) 55-58)**.

Kracht fails to specifically disclose that the administrator is operable to determine that there is another node between the first and second node using a timing analysis.

Gundavelli discloses a similar system for discovery of devices on a network (Abstract). Gundavelli teaches determining the existence of otherwise undiscovered nodes using a timing analysis (delays in BPDU keep-alive packet receipt are monitored and excessive delays cause root nodes to move and result in discovery of new switches)(col. 6, l. 65 to col. 7, l.6). This would have been an advantageous addition to the system disclosed by Kracht since it would have allowed additional switches to be detected, providing a more complete topology of the network.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform a timing analysis of packets sent via the network to cause root nodes to move and provide for the discovery of additional switches.

14. Claims 4, 7, 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kracht (US 6,377,987) in view of Gundavelli (US 6,795,403) further in view of Snyder et al. (US 6,667,960).

15. In regards to claims 4 and 13 Kracht's does not teach, wherein the first message is sent responsive to a user command.

In the same field of endeavor Snyder et al. teach compute elements sending one frame, receiving, and storing information about each node on the network to discover the topology of the network **(Col. 4 line(s) 9-18)**. Likewise, the compute elements can query each port of the cross element A to identify which system components are connected **(Col. 5 line(s) 8-10)**, i.e. the first message being received is in a responsive to a user command.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the prior art disclosed in Kracht's mechanism for determining actual physical topology of network based on gathered configuration information representing true neighboring devices with Snyder et al. teaching as discussed above to allow for the capability of having a system that allows the components to generate and maintain a functional and physical topology of system components.

16. Claims 7 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kracht (US 6,377,987) in view of Gundavelli (US 6,795,403) further in view of Bhat et al. (US 5,684,959).

17. In regards to claims 7 and 16, Kracht and Gundavelli fail to specifically disclose that the first identification message further comprises statistical information about the first node and the first port and that the second identification messages further comprises statistical information about the second node and the second port.

Bhat discloses a similar system for network topology discovery (Abstract) Bhat teaches a first identification message further comprises statistical information about a first node and a first port (Col. 4 line(s) 7- 9, teach that every MAC (node) generates a NIF, and since the first id message is a NIF it contains statistical information as online in Col. 4 line(s) 9-16.); and a second identification message further comprising statistical information about a second node and a second port (Col. 4 line(s) 9-16 and 55-59, teach that the second id message (sent from the second node) comprises statistical information about the second node and the second port.).This would have been an advantageous addition to the system disclosed by Kracht and Gundavelli since it would have allowed statistical information about the ndodes and ports to be included in the information messages.

Therefore, it would have been obvious to one of ordinary skill in the art to include statistical information in the information packets to allow sharing of this information without requiring additional packets.

18. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kracht (US 6,377,987) in view of Gundavelli (US 6,795,403) further in view of Snyder et al. (US 6,667,960).

19. In regards to claim 18 Kracht discloses, an information handling system, comprising:

h. a first node **(fig. 2A #202)** having a first port **(fig. 2A #214)**,

i. the first node **(fig. 2A #202)** operable to be connected in a computer network comprising a second node **(fig. 2A)**, the second node **(fig. 2A #204)** having a second port link **(fig. 2A #220)**; wherein the first node **(fig. 2A #202)** is operable to:

v. transmit a first message a first identification message **(fig. 2A)**, the first identification messaged addressed to a first address, the first identification message comprising only one frame **(Col. 2 line(s) 47-50)**;

vi. and deliver the identification information to an administrator, the administrator operable to determine that the first node and the second node are physically connected.

Kracht do not teach receive a second message on the first port, the second message addressed to a second address, the second message comprising identification information about a second node in the communication network, the second node having a second port, the second message comprising only one frame; log the identification information. Kracht also fails to specifically disclose that the administrator is operable to determine that there is another node between the first and second node using a timing analysis.

Gundavelli discloses a similar system for discovery of devices on a network (Abstract). Gundavelli teaches determining the existence of otherwise undiscovered nodes using a timing analysis (delays in BPDU keep-alive packet receipt are monitored and excessive delays cause root nodes to move and result in discovery of new switches)(col. 6, l. 65 to col. 7, l.6). This would have been an advantageous addition to the system disclosed by Kracht since it would have allowed additional switches to be detected, providing a more complete topology of the network.

In the same field of endeavor Snyder et al. teach compute elements sending one frame, receiving, and storing information about each node on the network to discover the topology of the network **(Col. 4 line(s) 9-18)**. Wherein the compute element **(fig. 1 #105)** receives a message on a first port **(Col. 4 line(s) 13-15, 45-50),** the message including identification information about the crossbar element A **(fig.1 # 120) (second node)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made determine the topology of network based on gathered configuration information representing true neighboring devices and perform a timing analysis of packets sent via the network to cause root nodes to move and provide for the discovery of additional switches and generation of a more complete topology.

20. In regards to claim 19 Kracht discloses, wherein the identification information comprises an IP address **(Col. 2 line(s) 8-9)**.

21. In regards to claim 20 Kracht do not teach, wherein the administrator is operable to detect non-participating nodes in the network.

In the same field of endeavor Snyder et al. teach compute elements sending one frame, receiving, and storing information about each node on the network to discover the topology of the network **(Col. 4 line(s) 9-18)**. Likewise the compute elements are able to determine both functional and physical topology of the system, i.e. non-participating nodes in the network **(Col. 5 line(s) 57-58)**.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the prior art disclosed in Kracht's mechanism for determining actual physical topology of network based on gathered configuration information representing true neighboring devices with Snyder et al. teaching as discussed above to allow for the capability of having a system that allows the components to generate and maintain a functional and physical topology of system components.

Conclusion

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON STRANGE whose telephone number is (571)272-3959. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on 571-272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aaron Strange/
Examiner, Art Unit 2453